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UNITED STATES DEPARTMENT OF AGRICULTURE

WETLANDS

Role of the Forest Service

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Wetlands Are Important

What Are Wetlands?

Wetlands are transitional areas between open water and upland environments. They exhibit the influence of water through vegetation, wildlife, soil, or other indicators. Wetlands include the wide variety of ponds, sloughs, floodplains, bogs, marshes, swamps, and riparian (stream-side) areas that occur throughout the country. They range from the prairie potholes of the Midwest, bottomland hardwood forests of the South, willow-cottonwood riparian areas of the West, to the wet tundra of Alaska. When, how long, how fast, and how much water flows through wetland ecosystems greatly influences their function, value, and management.

Wetlands Functions and Values

Wetlands perform important functions including habitat for fish and wildlife, improvement of water quality, and flood reduction, as well as providing recreational opportunities and esthetic values. Riparian wetlands control soil erosion and provide buffers that protect water quality by filtering pollutants. Wetlands play a vital role in flood control by retaining runoff water.

Wetlands are important for maintaining biological diversity—the variety and distribution of plant and animal communities. Plant and animal life is highly diverse and productive on most wetlands due to the greater availability of water and nutrients. Wetlands, which comprise 5 percent of the total land area of the lower 48 States, sustain 35 percent of our Nation's threatened and endangered species. Wetlands play a critical role as wintering and breeding grounds for waterfowl and other migrant birds.

Photo by Tom Iraci

USDA Forest Service Photo

Ease of access and esthetic values of wetlands have often attracted people to these ecosystems. Water and the diversity of plant and animal life are major attractions for hunting, fishing, bird-watching, boating, sightseeing, and many other activities. In addition, productive forested wetland sites can provide high-quality timber for use in making furniture and cabinetry, and for other purposes.

USDA Forest Service photo

Photo by Lynn Rogers,NC-4202

Common Types of Wetlands

Freshwater forested and shrub wetlands—The majority of wetlands in the contiguous United States are in freshwater and have vegetation that is dominated by trees and shrubs. Common forested wetlands are bottomland hardwood forests and baldcypress swamps of the South. Some forested or shrub wetlands are flooded for prolonged periods while others are only seasonally flooded. Forested wetlands also include pocosins of the Southeast, red maple swamps of the Northeast, and cottonwood-willow riparian areas commonly found in the West.

Freshwater marshes—These wetlands are dominated by grasslike plants, such as sedges, rushes, grasses, or cattails. Some occur on the edges of rivers or lakes, while others exist on their own. Examples include the extensive sawgrass marsh in the Florida Everglades and the prairie potholes of the northern plains.

Coastal Wetlands—Most coastal wetlands are salt marshes, usually dominated by grasses. They occur along all the coasts but are most extensive along the Atlantic Ocean and Gulf of Mexico. Some coastal wetlands are dominated by shrubs or trees, with the best example being the mangrove forests of Florida.

Peatlands (Bogs and Fens)—These wetlands are characterized by the accumulation of undecomposed plant material, or peat. Sphagnum moss and sedges are usually the peat-forming plants. Peatlands occur in New England and across the Great Lakes region and are most extensive in Alaska.

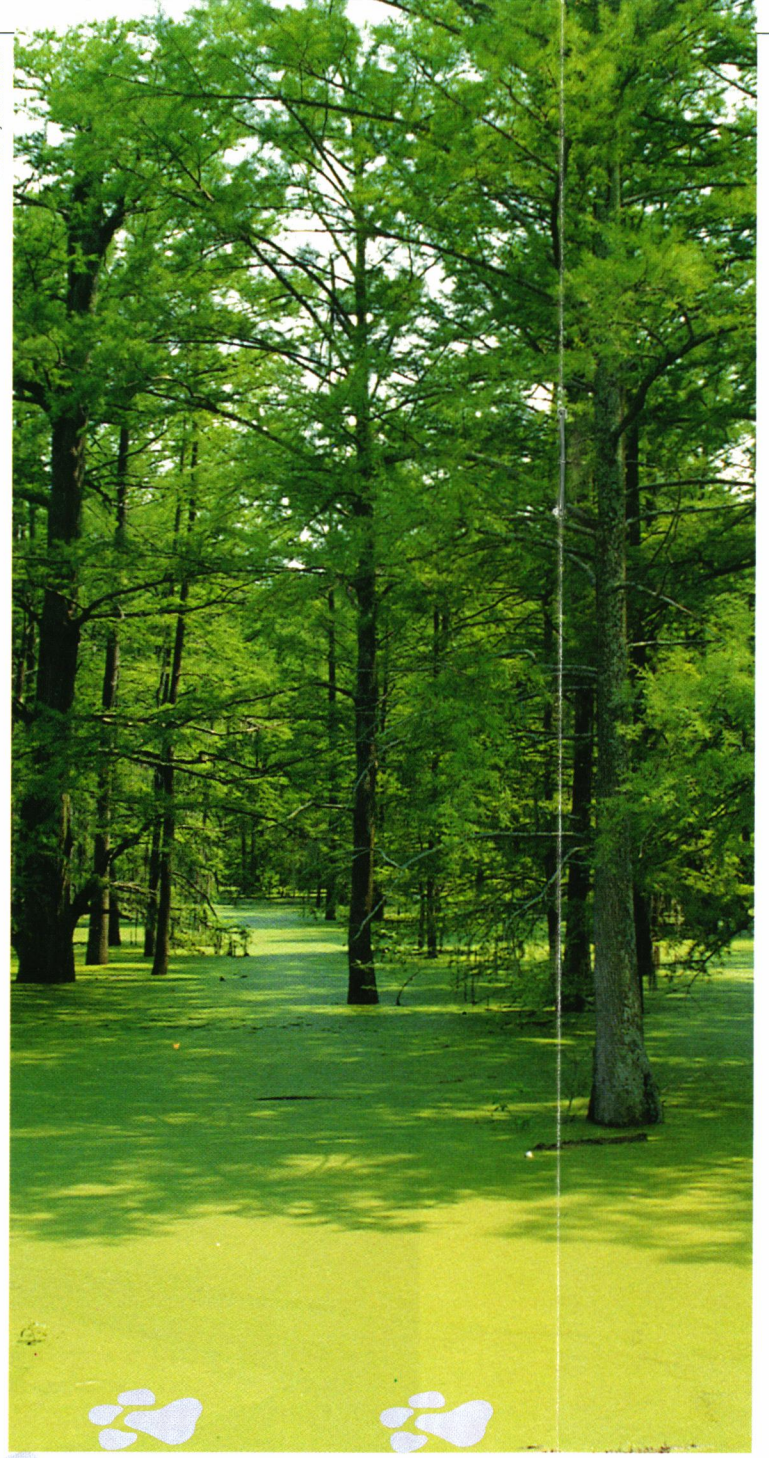

Photo by John Toliver

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Photo by Dorothy Andrake, 89-CS-0400

Wetland Ownership and Distribution in the United States

Most of the Nation's wetland ecosystems are privately owned. Nearly 74 percent are under private ownership, 25 percent are managed by Federal or State agencies, and 2 percent are under the jurisdiction of local governments. Within the Federal category, 40 percent of those lands classified as wetlands are managed by the Fish and Wildlife Service, 23 percent by the Forest Service, and 37 percent by other Federal agencies, including the National Park Service, Bureau of Land Management, U.S. Army Corps of Engineers, and the Bureau of Reclamation.

The distribution of wetlands in the Nation varies by geographic region. Although only 5 percent of the land area in the lower 48 States is classified as "wetland," wetlands comprise a significantly greater proportion of the land base in certain areas. Wetland ecosystems are especially prevalent in Alaska. That State alone has about 200 million acres (50 percent of the State's area) classified as "wetlands." Outside of Alaska, the largest concentrations of wetlands are found in the Southeast and in the North Central region.

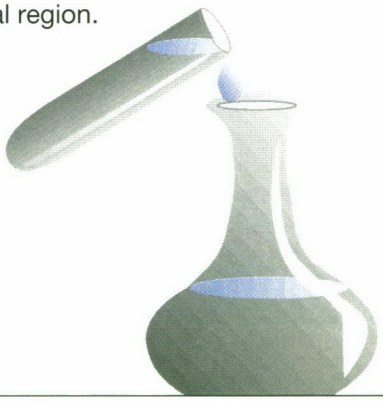

Photo number 00-CS-2787

Wetlands Management

Wetland ecosystems are managed for a variety of reasons, including timber production, flood control, pollution control, fisheries, wildlife habitat, and recreation. Through proper management practices, a wetland site can often be manipulated without degrading its functions or values. In many areas, management includes restoration of ecosystem functions.

Vegetation can be removed from a wetland site as long as the hydrology of the site is left intact. Timber harvest typically does not permanently alter the hydrology of the area. Some changes are possible from altering the soil and hydrology, thus altering the biological functions. Depending on the species involved, this can have positive, neutral, or negative effects, which typically are not permanent.

USDA Forest Service Photo

The Role of the Forest Service

National Forest Management

The Forest Service has management responsibility for 12 million acres of wetland and riparian ecosystems. These ecosystems are managed for their functions and values, including habitat for fish, wildlife and plants, flood control, water quality, timber, and recreation. The Forest Service must comply with the requirements, standards, and procedures of the Clean Water Act. The national forest land management plans describe the desired future conditions for wetlands and riparian areas. They contain specific standards and guidelines directing management practices for multiple use of wetlands:

- Restoration of habitat and hydrologic functions of degraded wetland ecosystems.
- Land acquisition program to increase wetland ecosystems, such as the Pinhook Swamp in Florida.
- Descriptive classification systems for riparian ecosystems and for the aquatic portion of unaltered wetland ecosystems in the West.
- Proper management practices to protect wetlands, such as establishing vegetated buffer zones and placing culverts or bridges to allow for passage of water.
- Special equipment for harvesting, yarding, and transporting timber from forested wetlands, such as low ground-pressure equipment with wide tires, helicopters, and cable retrieval systems.
- Wetlands created to clean up mine drainage or for wastewater treatment.

Forest Service Research

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The Forest Service has maintained a national program of water protection research since 1910. Some of the earliest research focused on watershed management, especially water flow and quality. A silviculture research program in the bottomland hardwood wetlands has continued since the 1930's. Research relevant to wetland issues has been part of Forest Service activities in many other locations.

- At the Marcel Experimental Forest in Minnesota, researchers have studied the hydrology of peatlands and the impact of cutting practices on stream flow. The permanent conversion from forest to agriculture on more than two-thirds of a watershed will significantly increase the size of flood peaks.
- Research on the socioeconomic impacts of individual State wetland protection legislation has shown that many laws are conflicting, inconsistent, and overlapping, causing needless expense to forestry operations.
- Studies in the Copper River Delta of southwestern Alaska determined that moose use the wetland community primarily for feeding and the upland forest community as a bedding area.
- Research on restoration of Southwestern riparian wetland has shown that properly engineered and placed water control structures can stabilize stream channel segments and trap sediment, thus restoring degraded riparian habitat.
- Hydrology in sub-alpine wetlands studied in the Snowy Range, Wyoming, is primarily influenced by on-site snowmelt and precipitation, and by subsurface and tributary flow routed to the wetlands from adjacent hillslopes.
- In a study of costs associated with implementing best management practices, streamside management zones and culverts in timber harvest areas provided high water quality protection at a low cost. Average costs were 2.9 to 5.1 percent of gross harvest revenue.
- Studies are being conducted on small isolated wetlands in the Northeast to determine the utility of amphibians as indicators for overall wetland health.

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